

cVEND plug II - Platform for App Development

TERMINAL MODULE FOR CONTACTLESS PAYMENT & TRANSIT

- Invisible integration into validators, on-board computers and other devices
- Tailored for transit applications
- Multi-Application architecture enables independent acceptance of contactless open-loop banking cards and closed-loop tickets
- Flexible secure Linux platform to develop own applications
- PCI PTS 6.x and EMVCo L1 3.1a certified
- Flat version without Ethernet connector available
- SDK for developing your own Level 3 application



cVEND plug II is the powerful PCI PTS 6.x next generation and backwards compatible successor of the cVEND plug first generation, which has been used successfully in thousands of projects worldwide.

cVEND plug II is a future-proof solution for open-loop and closed-loop projects in public transport, parking and many other applications. The wide range of Level 2 payment kernels enables the realization of international projects.

cVEND plug II is designed for transit applications and complies with related specifications of global card brands as well as with railway and automotive standards.

Due to the low power consumption and a special low-power standby mode, it is also ideal for battery or solar-powered applications. Wake-up from standby can be performed via card detection, time-controlled or via a digital input.

The Linux based cVEND.OS operating system together with an easy to use SDK makes application development fast and easy.

The cVEND.OS Multi-Application architecture supports open loop payment cards and mobile wallets as well as closed-loop cards like MIFARE, CIPURSE, ITS0, VDV-KA, or Calypso with the same priority.

Due to the secure infrastructure provided by FEIG and its security architecture with crypto plug-ins for symmetric and asymmetric encryption, key derivation and remote key loading, cVEND plug II is suitable for PCI P2PE solutions.

An alternative hardware version without an Ethernet connector allows a more flat design. Network connection can be realized via USB.

Depending on your needs cVEND plug II can be supplied in different software configurations:

cVEND plug II.L2

With the L2 version, FEIG provides a terminal that is fully configured to customer requirements. This includes loading customer applications and keys in our PCI P2PE-certified key injection facility.

cVEND plug II - generic

With the generic version, system integrators can load their applications and keys onto the terminal themselves or use FEIG's PCI P2PE-certified services for remote loading of applications and keys.

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Terminal module for contactless payment & ticketing

Technical Data

Housing	Electronics module with plastic front element UL94 V0
Dimensions (W x H x D)	
Overall	79 mm x 70 mm x 31,1 mm (with Ethernet connector) 79 mm x 70 mm x 25 mm (without Ethernet connector)
Visible	Ø 28,5 mm
Installation	In or behind 3 mm non conducting front plates
Environmental conditions	
Operation	-30 °C to +70 °C
Storage	-30 °C to +80 °C
Humidity	5 % to 95 % condensing moisture resistant coating
Power Supply	5.0 to 5.5 V DC
Power Consumption	
Operation	< 1 A, peripherals excluded
Standby	< 1 mA
Wake-up	digital input, timer, card detection
User Interface	6 LED (4 green, 1 red, 1 yellow) internal multi-frequency buzzer, illuminated contactless logo
Contactless Interface	ISO/IEC 14443-A /-B (106, 224, 448, 847 kbit/s) ISO/IEC 15693 Support of contactless payment cards, mobile NFC devices in card emulation mode, MIFARE, Calypso, Sony FeliCa and other
SAM Interface	4 x SAM Sockets with optional SAM Extension Board
Peripheral Interfaces	Ethernet, RS232 (V.24), RS232-LVTTL, USB 2.0 OTG, GPIO's, I²C and SPI (Optional without Ethernet)
Online Connection	Ethernet, IP over USB
CPU & Security	Secure ARM Cortex-A7 CPU up to 1 GHz with real time memory encryption, cryptographic hardware acceleration, true random number generator, tamper-proof hardware
Memory	RAM 512 Mbyte, FLASH 1 GByte
Operating System	Linux based cVEND.OS
Clock	Real Time Clock – Battery backed
Battery	3 V Lithium Battery, 550 mAh, Lifetime 15 years at 25 °C

Standard Conformity

Payment Security	PCI PTS 6.x, SRED, Common.SECC
Contactless	EMVCo Contactless Level 1 - V3.1a ISO/IEC TS 24192 (STA 3.1)

Available Level 2 Payment Kernel

Mastercard contactless V3.1.4
VISA contactless V2.2. incl. transit V1.1
American Express - Expresspay 4.2
Discover D-PAS 2.0
JCB contactless 1.6
UnionPay contactless 2018 transit and overseas
RuPay - qSPARC 2.0.1
PURE 2.1.8 e.g. for mada, Bancomat mobile
Bancomat contactless 2.2.0
CPACE 1.1 e.g. for Bancontact & Cartes Bancaires
Interac
eftpos (on request)

Environment	RoHS 2011/65/EU
Vibration / Shock	IEC 60068-2-6, IEC 60068-2-27, EN 50155, IEC 61373 ready
Protection class	(installed in equivalent housing)
Impact	IK 10
IP class	IP 65
Electrical Approvals	CE, FCC, IC EN ECE – R10 and EN 50121 (in conjunction with related components)

Product Versions

Hardware Versions

Standard	Version with Ethernet connector
Flat	Version without Ethernet connector (TCP/IP function via IPoverUSB)

Software Configurations

L2-Custom	Configuration with customer App and Key loading in secure FEIG production facility
Generic	Secure device designed for local or remote application and key loading

Accessories

Software Development	SDK, Development devices, Tools and related services
cVEND plug	4 x SAM sockets ID000 format, EMVCo L1
SAM Extension Board	compliant, voltage class A, B, C T=0 and T=1 protocol, 1 x microSD card (SDIO / SD, V 2.0) socket
cVEND plug Module Housing	Module housing for semi-integrated or surface mounting made of robust plastic